DOCUMENT RESUME

ED 206 078 EA 013 815

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TITLE A Pro-Active Model for Curriculum Change.
PUB DATE Mar 81
NOTE 12p.; Paper presented at the Annual Meeting of the Eastern Educational Research Association (Philadelphia, PA, March 12-15, 1981).

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Change Strategies; Citizen Participation; *Curriculum Development; *Educational Change; Elementary Secondary Education; Models; *Needs Assessment; Parent Participation; Student Participation; Teacher Participation
IDENTIFIERS *Delphi Technique

ABSTRACT

One characteristic of the American educational system has been its tendency to change as a result of reacting to its critics rather than through a systematic analysis of its effectiveness. In an attempt to change this pattern, the model presented here borrows from research findings from divergent fields to create a method of curriculum change that allows for systematic analysis of needed changes by those involved. Based on diffusion models proposed earlier by Rogers and by Hetzel and Barnard, a paradigm is developed that provides for a continuous, systematic approach to curriculum revision at the school-district level. The model employs a modified Delphi technique as part of the process. When the Delphi technique is used, the "experts" consulted by questionnaire about future curriculum needs represent all constituencies concerned, including teachers, parents, administrators, taxpayers, and students. The model is described as "proactive" because it suggests a change process through continuous self-analysis rather than through a reaction to critics or pressure groups outside the system. (Author/JM)

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A Pro-active Model for Curriculum Change

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One characteristic of the American educational system has been its tendency to change as a result of reacting to its critics rather than through a systematic analysis of its effectiveness. The current scene is no exception: the "back-to-basics" movement, competency-testing, mainstreaming, and programs for the gifted and talented are just a few examples of educational reforms which are direct responses to issues put forth by strongly supported special-interest groups. While such innovations may indeed be both useful and necessary, even the most cursory reading of the literature on the history of educational innovations would suggest that these current movements will soon enough suffer the same fate as programmed instruction, humanistic education, and similar "enthusiasms."

This tendency to react to the demands of society or to the assaults of critics is neither new nor surprising, but unchecked it will only serve to increase the frustration and "burn-out" reported by teachers and administrators. Although there is widespread agreement that a problem exists, the possible outcome is less clear. According to Minogue (1980)

> A further consequence of the new situation is that all educational practices, including the curriculum itself, are opened up to incessant public debate in

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> which special groups with axes to grind attempt to gain their share of influence over that most desirable of objectives, the mind of the young.

On the other hand, Tyler (1978) maintains that

> . . . our society will not support a widespread comprehensive revolution in its schools. If the schools are to respond to societal demands, we need to concentrate on those critical areas where there are serious problems rather than try to mount a program requiring the complete reconstruction of the school.

What does seem clear is that the schools today are experiencing increasing amounts of pressure from a greater variety of sources. For example, it is easy to see how the writings of such "radical reformers" as Holt, Kozel, Illich, and Silberman were sufficiently powerful and moving documents as to cause educators, particularly young, energetic teachers to quickly embrace the humanistic movement. Teachers jumped onto the "individualized instruction" bandwagon with little, if any, knowledge of what LAP's were but with an enthusiasm that seemed to make up for their lack of knowledge. For whatever reasons, the humanistic movement was rather short-lived. Before long one began reading in the press articles expressing growing concern over the decline in math and verbal SAT scores and the almost exponential increase in school vandalism, and the schools seemed lauched almost overnight into the "back-to-basics" movement. Concomitantly, individual pressure groups were laying the groundwork for the passage of such legislation as PL 94-142 and Title IX as avenues to change existing school structure. Thus, the impetus for change and the factors affecting change were more and more likely not to be in the hands of professional educators.

Just as the schools are changing, so too is the traditional role of the school administrator. Today's administrators are caught between such vocal pressure groups as the parent groups of teachers' unions, and taxpayers all demanding not only the right to be heard but insisting on altering the schools in

conformity to their own particular demands. Major stresses facing school administrators range from controlling student violence to implementing unclear legislative mandates. Scanlan (1978) maintains that finding solutions to existing problems will require more specialized technical and organizational skills on the part of administrators.

> The reform of the schools depends in large part on whether administrators are willing to abandon existing systems and make greater use of change technology.

Scanlan's call to administrators to "abandon existing systems and make greater use of change technology" is welcome and needed. But where are they to begin? Educational researchers continue to increase the theory-to-practice gap while practitioners battle, sometimes unsuccessfully, with grave problems of immediate concern. The purpose of this paper is to demonstrate how one can draw from research results in divergent fields to suggest a possible paradigm for the curriculum change process applicable at the school-district level.

While there exists an impressive body of research on educational forecasting methods and evaluation techniques which can be applied to the problem of rational curriculum change, it seems almost a tradition in the field of education to ignore studies which fall into areas only tangentially related to one's specialized interests. For example, the Rand Corporation's development of the powerful Delphi technique has been seriously underemployed in educational settings despite its obvious applicability. Cyphert's (1970) work at the University of Virginia demonstrated clearly the effectiveness and efficiency of the Delphi technique as a short-term forecasting tool. Similarly, the impressive long-range analyses of the diffusion of innovations done by Rogers and by Rogers and Shoemaker have received little acknowledgement in educational research.

In one of the most impressive long-range studies of the change process,

Rogers (1962) analyzed the literature on the diffusion of innovations in the fields of anthropology, sociology, marketing, medicine, and education in an attempt to formulate a general theory governing the diffusion and adoption of innovations. The resulting model (see Fig. 1), according to Rogers, was not intended as the theory of adoption, but was intended as a theoretical framework upon which future research might be designed.

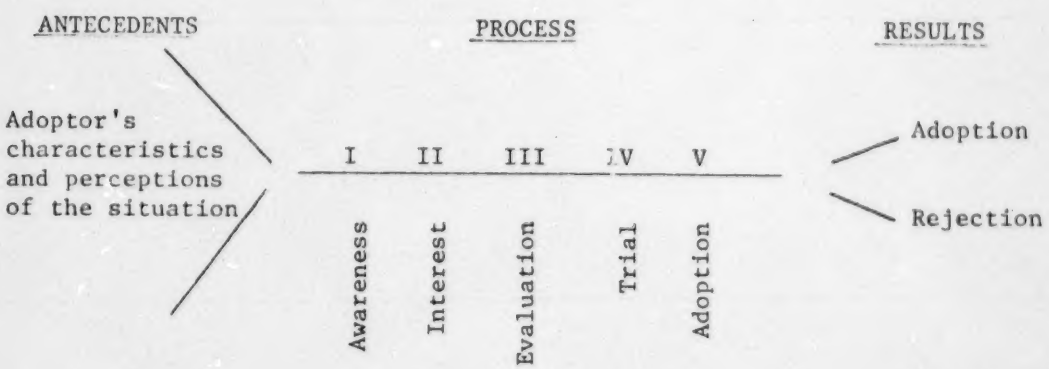

Fig. 1 Roger's (1962) Paradigm of the Adoption of an Innovation by an Individual within a Social System

The model contains three major divisions: Antecedents, Process, and Results. "Antecedents" are those factors present in a social system prior to the introduction of an innovation, while the term "Results" refers to the ultimate accept reject decisions. The "Process" division represents the stages through which an individual member of the social system becomes increasingly more involved with the innovation.

In the first two stages, the individual becomes aware of and interested

in an innovation through contact with others - usually, although not necessarily, in the same social system. The mechanism for this, according to Rogers, varies among the different fields, but tends to rely heavily on interpersonal communication. The evaluation and trial stages are usually done abstractly; the interested individual either seeks research information on the perceived characteristics or assesses possible effectiveness and "fit" through analogy. The final stage of the "Process" division is the decision to adopt or reject the innovation.

While Rogers' model identifies distinguishable stages in the Process division and indicates the impact of such factors as information sources and the perceived characteristics of the innovations, there is little attempt made to describe the movement through those states beyond an a posteriori analysis of the characteristics of individual adoptors. Nevertheless, it would seem that within the educational system the "process" is critical.

One of the less well-known contributions from the non-research literature is a model for the change process proposed by Hetzel and Barnard (1973). According to Hetzel and Barnard the most critical variable in the change process concerns the people implementing the innovation. Their proposed five-step model (see Fig. 2) is similar to the "Process" division in the Rogers model, but the focus or basic premise in this case is on creating and maintaining conditions necessary to allow and encourage groups to work together toward common goals. Thus, while Rogers analyzed retrospectively how individuals first became aware of a particular innovation, Hetzel and Barnard point out the need to create awareness of the problem before seeking possible solutions. The particular strategies suggested by Hetzel and Barnard for creating awareness involve using group consensus and/or individual interviews. Having encouraged groups of teachers to identify problems, "the next step is to have the staff identify

with the need, accept ownership of the problem, and secure commitment to solving it." Hetzel and Barnard point out the obvious pitfalls (it is critical, for example, that the leader accept the decisions of the staff), but maintain that the overwhelming advantage lies in the morale factor: effort is greater and morale is higher because there is direct and real involvement. The major disadvantage to the Hetzel and Barnard model is its limited applicability beyond the individual school, since the approach clearly involves the necessity of participants in the process being able to meet together during different stages of the cycle.

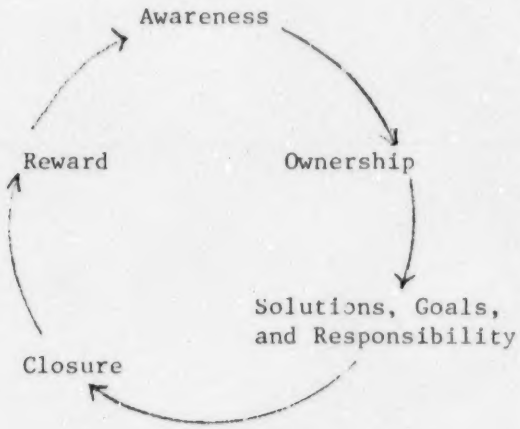

Fig. 2. Motivation for Change
(Hetzel and Barnard, p.527)

One of the tools occasionally employed in educational research in recent years has been the Delphi technique. Basically, the Delphi technique involves the notion of consulting "experts" within a given field who, through successive rounds of opinion/reaction sharing, arrive at a consensus in predicting some future outcome(s). The opinion/reaction sharing rounds usually involve

providing feedback on each round to the experts and requesting that respondents justify their answers, particularly when those responses differ appreciably from the group norm. Nash (1978) reviewed a number of major studies employing the Delphi technique in educational settings and found that basically they involved three general areas: educational goals and objectives, curriculum and campus planning, and effectiveness and cost-benefit measures. One major part of Nash's review concerned current criticism of the Delphi technique as a research instrument.

In general, the major critics of the Delphi technique have identified such problem areas as: the representativeness and competence of the panel of "experts"; the possible bias in interpreting response; the personal characteristics of both respondents and non-respondents; and the absence of validation studies on the technique as a whole. While some of the more strongly negative critics of the Delphi technique feel that the procedure should be dropped entirely until it is shown to be scientifically tenable, others (according to Nash) feel that the "rationale for continuing to employ Delphi is that it is, in combination with other tools, a very potent device for teaching people to think about the future of education in much more complex ways than they ordinarily would." Moreover, according to Weatherman and Swenson (1974)

> There are a number of advantages to the use of the Delphi technique in educational planning when consultation is desired. It provides a means of obtaining information from a large number of persons, without the restrictions often imposed by geography and scheduling. Delphi is especially appealing because of ease of administration and relatively low cost when compared to the expense of convening a similar group. It provides a means of obtaining information about particularly complex phenomena, which are often difficult to conceptualize. . . . Another merit is that the procedure is often looked upon by participants as an interesting and useful task

And finally, Nash concludes that the Delphi technique "is a convenient and relatively non-technical methodology which is appropriate for use with a population not primarily research-oriented."

Using modifications of the Delphi techniques and combining different aspects of the change models offered by Rogers and by Hetzel and Barnard, it is possible to derive a model for curriculum change which allows opportunity for professional education to anticipate needed curriculum revisions rather than reacting to the outcry of critics (see Fig. 3).

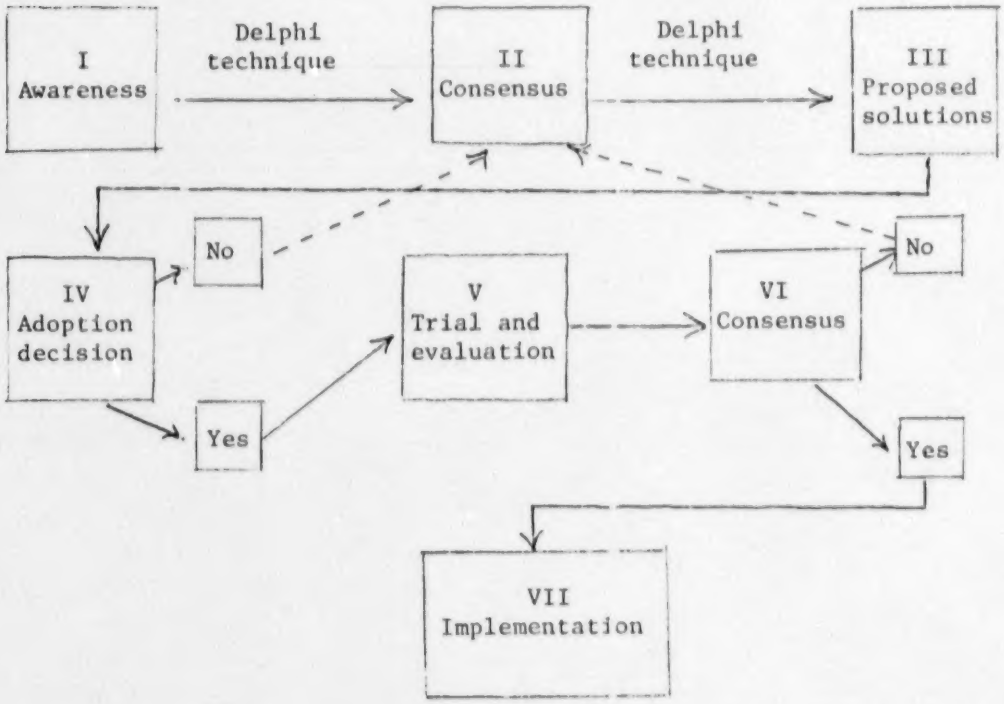

Fig. 3 A pro-active model for curriculum change

The first two stages, Awareness and Consensus, are similar to those proposed by Hetzel and Barnard. The difference here involves using a modified Delphi technique. One of the first modifications required is in the use of the "experts" who originally generate and later refine the predictions about future needs. When the issue being explored is, for example, teachers' and parents' perceptions of problem areas, then clearly the most expert people who could be called upon to comment would be the teachers and parents themselves. They must be involved in not only the first-round generation of ideas, but also the subsequent categorization of ideas which form the questionnaires to be submitted for further reaction. In fact, the "experts" should represent a cross-section of all constituencies involved.

A second modification concerns the number of rounds required to achieve consensus among the respondents. The results of a study by Cyphert and Gant (1970) indicated that by the third round virtually all changes of opinion had occurred. It is not inconceivable that the process could be done with only a first open-ended questionnaire designed to generate items and then a final questionnaire to seek reactions to the original set of items. It might be more useful, however, to plan a third round in which feedback on responses to the second round is offered (along with the opportunity to reconsider one's earlier opinions).

Another modification would involve eliminating the usual practice of asking experts whose opinions differ from the norm to provide justification for their different responses. This aspect of the Delphi technique seems inappropriate when its purpose is to seek consensus of perceptions of needs.

Having arrived at some agreement on the nature of the problem, a similar round of Delphi-like questionnaires would seek to generate the possible solution(s) agreeable to the constituents.

While the process to this point may seem tedious, there are a number of advantages: first, the use of questionnaires rather than large group meetings allows a larger number of people representing a wide variety of opinions, and as Scanlan (1978) points out

> A clear understanding of what it is that parents and other citizens want from their schools is a critical factor in assessing school and district goals, determining priorities, and projecting changes.

At stage IV, Adoption Decisions are most properly made by the appropriate administrative leadership. Should the decision be against adoption, the recommendations, with reasons, are returned to the participating groups so that consensus can again be sought. Should the decision be in favor of adoption, the careful implementation of the proposed innovation on a carefully designed trial-and-evaluation basis follows. The critical factor here is that the results of the trial-and-evaluation stages must be returned to the participants and consensus sought again before full-scale adoption.

In summary, the model proposed here allows for the involvement of the major constituencies in the change process at the school-district level using a communications technique whose effectiveness is well-supported by existing research. In addition to the demonstrated effectiveness of the Delphi technique, the notion of involving all possible participants (teachers, parents, administrators, taxpayers, and students themselves) is strongly supported within the literature on resistance to change. And since the model clearly provides for a continuous process of consultation and consensus, schools employing such techniques would be unlikely to be forced into the position so prevalent today of hastily attempting to modify existing curriculum or instruction in response to unclear mandates from external sources. Then, too, the model may well provide a means for reducing some of the pressures on school administrators without requiring major changes in current administrative procedures.

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